

**REMARKS**

Applicant hereby traverses the outstanding rejections and requests reconsideration and withdrawal in view of the remarks contained herein. Claims 1-20 are pending in this application.

**Rejection under 35 U.S.C. § 103**

Claims 1-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,026,505 to Hedberg et al (hereinafter "Hedberg") in view of U.S. Patent No. 5,504,712 to Conan (hereinafter "Conan").

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. *See*, M.P.E.P. § 2143. Without conceding the second criteria, Applicant asserts that the rejection does not satisfy the first or third criteria.

A. Lack of All Claim Limitations

Claims 1 and 9 require bit line multiplexers to shift in a replacement column group of memory cells into said array. At least this limitation is not shown in either Hedberg or Conan.

Hedberg describes storing the column addresses of columns with faulty cells in registers which allow the faulty columns to be masked and a new column mapped in. *See*, Abstract and column 11, lines 27-57. The Examiner acknowledges that Hedberg does not disclose using bit line multiplexers to shift in a replacement column group of memory cells. Instead, the Examiner argues that Conan discloses this limitation in Figures 1-4 and points to the description of Figure 4. The Applicant respectfully disagrees with the Examiner's assertion.

Conan describes a column address A0 selecting columns with the same column order number. It performs this selection by means of a multiplexer placed at the output of the columns. Column 6, lines 64-67. Similarly, groups of redundancy columns are associated with

an amplifier and are connected to the amplifier by means of a multiplexer in the same way that the columns of memory cells of the main network are connected to the amplifiers by means of a multiplexer. Column 7, lines 19-23. It is clear from this description in Conan that the multiplexers described by Conan are not the mechanism used by Conan to select replacement columns. Instead, a redundancy column is selected by means of a redundancy circuit including a comparator COMP capable of comparing the column address AC received by the memory with defective column addresses memorized in a storage register RS. Column 7, lines 11-14. When a defective address is applied to the memory, it is recognized by the comparator, which then has the function of inhibiting the column decoder DC and selecting the redundancy column to replace the defective column. Column 7, lines 14-18.

Conan, therefore, does not describe bit line multiplexers to shift in a replacement column group of memory cells into said array, and Hedberg is not relied upon as teaching this limitation. As the § 103(a) rejection of record does not teach or suggest all the claim limitations of claims 1 and 9, Applicant respectfully asserts that claims 1 and 9 are allowable, for at least the reasons set forth above, over the 35 U.S.C. §103 rejection.

Claims 2-8 and 10-15 each require, through their dependencies from claims 1 and 9, respectfully, using bit line multiplexers to shift in a replacement column group of memory cells into said array. For the reasons set forth with respect to claims 1 and 9, respectfully, neither Hedberg nor Conan describes this limitation. Applicant, therefore, respectfully asserts that claims 2-8 and 10-15 are allowable, for at least the reasons set forth, over the 35 U.S.C. §103 rejection.

Claim 16 requires activating an alternate word line to shift in a replacement row of memory cells into said array. The Examiner acknowledges that Hedberg does not show this limitation. The Examiner, instead, relied upon Conan as describing this limitation. Applicant respectfully disagrees with this characterization of Conan.

As described with respect to claims 1 and 9, Conan uses a redundancy circuit having a comparator to select redundant columns. A defective address is recognized by the comparator which inhibits the column decoder and selects a redundant column. Column 7, lines 11-18.

Conan never discusses replacing defective rows, only columns and Conan never shifts in a replacement row of memory cells.

The description in Conan is clearly different than activating an alternate word line to shift in a replacement row of memory cells required by claim 16. As neither Hedberg nor Conan describes activating an alternate word line to shift in a replacement row of memory cells into said array, the § 103(a) rejection of record does not teach or suggest all the claim limitations of claim 16. Applicant, therefore, respectfully asserts that claim 16 is allowable, for at least the reasons set forth above, over the 35 U.S.C. §103 rejection.

Claims 17-20 each require, through their dependencies from claim 16, activating an alternate word line to shift in a replacement row of memory cells into said array. For the reasons set forth with respect to claim 16, respectfully, neither Hedberg nor Conan describes this limitation. Applicant, therefore, respectfully asserts that claims 17-20 are allowable, for at least the reasons set forth, over the 35 U.S.C. §103 rejection.

B. No Motivation to Combine

It is well established that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The Examiner has stated that it would have been obvious to “implement multiplexers taught in Conan in the redundancy allocation method of Hedberg for the purposes of replacing defective cells with good cells by selecting groups of redundant columns (rows), using multiplexers, in lieu of a laser fuse blowing device.” This statement of motivation is inconsistent with the teachings of both Hedberg and Conan.

First, there is no laser fuse blowing device in either reference or the present application. Therefore, there can be no motivation to replace a laser fuse blowing device. Second, as described above, Conan does not use the multiplexers described therein as part of the mechanism to replace defective columns and Conan does not describe replacing defective rows. *See*, column 7, lines 11-18, described above. As Conan’s multiplexers are not used in replacing

defective columns, the Examiner's motivation is inconsistent with the express teaching of Conan.

As neither Hedberg nor Conan teach the motivation cited by the Examiner for the combination, Applicant respectfully asserts that there is no motivation to combine Hedberg with Conan as required by *In re Mills*.

### **Conclusion**


In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 08-2025, under Order No. 10004543-1 from which the undersigned is authorized to draw.

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail, Label No. EV482708837US in an envelope addressed to: MS Amendment, Commissioner for Patents, Alexandria, VA 22313.

Date of Deposit: August 22, 2005

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